FEDERAL SECURITY AGENCY
U. S. PUBLIC HEALTH SERVICE

IN REPLYING, ADDRESS THE
Tbc. Research Laboratory,
411 E. 69th St., New York 21, N. Y.

February 2, 1949.

Dr. Joshua Lederberg,
Department of Genetics,
The University of Wisconsin,
College of Agriculture,
Madison 6, Wisconsin.

Dear Josh:

I will send you the reprints when they arrive. Meanwhile I hope you will continue to send me all your requests in order to avoid duplication.

Your news about the Salmonella aromaticless mutant interests me very much, since I have been spending most of my time lately on phenylalanine and tyrosine. We have three mutants which require phenylalanine, plus tyrosine, plus tryptophane; and ~~four~~ five requiring these three plus histidine, but this proved to be due to two discrete mutations since back mutants were obtained which had lost the histidine requirement. The others back mutated to prototrophs, from which I infer that a single mutational step is responsible for the triple requirement. Two of these triple mutants show heavy syntrophism toward the other two.

I haven't tested any simple cyclic compounds, but will certainly take advantage of your tip and will try cyclohexyl as well as aromatic compounds. You have stated that Zinder's mutant responds to phenylalanine and tyrosine as well as a variety of phenols. Would you mind letting me know whether this means phenylalanine plus tyrosine, or phenylalanine or tyrosine? We have found no mutant which will respond alternatively to these two amino acids. Since neither of these amino acids shows a significant sparing action on the utilization of the other by a mutant with a single requirement, I would infer that there is no inter-conversion of these compounds in either direction by our strain of E. coli.

One other item that has turned up in this story is the fact that our single phenylalanine mutants heavily feed the tyrosine mutants, and vice versa. We haven't yet found whether the secreted compounds are amino acids or precursors.

Ryan has sent us a slant of K-12 but, so far, Werner and I have been so immersed in other problems that we have had no occasion to get started with it. I will be glad to talk to you in Chicago about our library of mutants and find whether there are any particular ones that you would like to test.

Looking forward to seeing you soon,

Sincerely yours,

Bernie

BDD/hl

Bernard D. Davis